ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

2200 Churchill Road, Springfield, Illinois 62706 217/525-3334

APPLICATION FOR PERMIT TO DEVELOP AND/OR OPERATE A SOLID WASTE MANAGEMENT SITE

In Accordance With The Environmental Protection Act

All information submitted as part of the Application is available to the public except when specifically designated by the Applicant to be treated confidentially as regarding a trade secret or secret process in accordance with Section 7(a) of the Environmental Protection Act.

APPLICATION MUST BE SUBMITTED IN DUPLICATE

DO NOT WRITE IN THIS SPACE - FOR E.P.A. USE ONLY

_____ COUNTY - Land Pollution Control

_____/_____ Region _____

Application Received:_____ Pre-operation Insp._____

Reviewed by: Geol. ( ) Eng. ( ) Other ( ) By:_____

Preliminary Site Review:_____ Operating Permit: Granted_____

Application Filed:_____ _____ Denied_____

_____ _____ _____

Comprehensive Review Initiated:_____ _____

Development Permit: Granted_____ Denied_____ _____

_____ _____ _____ Permit No._____

PART I - APPLICANT INFORMATION

A. SITE IDENTIFICATION

1. Name of Applicant Waste Management of Illinois, Inc.
(Person responsible for operation)

2. Address of Applicant P. O. Box 563
(Street, P. O. Box, or R. R. #)

Palos Heights, Illinois 60463
City State Zip Code

Telephone: 312/361-4010
(Area Code) (Number)

3. Name of Land Owner Same
(If same as above, so indicate)

4. Address of Land Owner _____
(Street, P. O. Box, or R. R. #)

_____
City State Zip Code

5. Name of Site K-3 Landfill

6. Address of Site R. R. #1
(Street, P. O. Box, or R. R. #)

Kankakee, Illinois
City State Zip Code

Kankakee County Otto Township

7. Land ownership (Check Applicable Boxes)

( ) Presently Owned by Applicant ( ) To Be Leased by Applicant For _____Years
(X) To Be Purchased by Applicant ( ) _____Years of Lease Remaining: termination date of lease_____

Operated by: Ill. Corporation (X) Parternership ( ) Government ( )
Individual ( ) Other ( )

B. SITE BACKGROUND (Check Applicable Box or Boxes)

8. ( ) This is an existing operation begun _____(mo.) _____(yr.).
(X) This is a proposed operation.
( ) This is a proposed extension of an existing adjacent operation:
Illinois E.P.A. Permit No._____: No Illinois E.P.A. Permit ( ).

PART II - LOCATION INFORMATION

A. ZONING AND LOCAL REQUIREMENTS

9. Present zoning classification of site Agricultural.

10. Does present zoning of site allow the proposed usage? (X)Yes ( )No.

11. Restrictions (if any) Must have special use permit from Kankakee County.

12. Check applicable boxes which describe the use of adjacent properties surrounding site.

	Residential	Commercial	Industrial	Agricultural	Others*
a. North	( )	( )	( )	(X)	( )
b. East	( )	( )	( )	(X)	( )
c. South	( )	( )	( )	(X)	( )
d. West	( )	( )	( )	(X)	( )

*SPECIFY USE CLASSIFICATION_____

13. a. (x) Yes. A Special Use Permit is required from the County Board of Commissioners.

b. (x) No. The Special Use Permit is expected before July 27, 1974.

c. Copies of supporting documents will be forwarded as soon as they are available.

B. LOCATION

14. Appendix A contains the Kankakee Quadrangle map, 1964.

15. a. The site is outlined in the southeast sector of Appendix A.

b. The legal description of the site is as follows:

The North Half of the Northwest Quarter of Section Five in Township Twenty-nine North, Range Thirteen West of the Second Principal Meridian, Otto Township, Kankakee County, Illinois.

c. State Plane coordinates were not carried in for this site.

16. The site is a gentle hillside with 75% of the area suitable for farming and presently tilled.

17. a. Wells near the site are shown on sheet 2 of the drawings.

b. The Iroquois River approximately one-half mile east of the site flows to the Kankakee River which is a public water source. See sheet 1 of the drawings. The small stream indicated on the drawing as running northeastwardly from the site is intermittent.

c. Only residences and farm buildings are near the site. They are shown on sheet 1 of the drawings.

d. There are no pertinent facilities other than those described above.

PART III - SITE CHARACTERISTICS

A. GEOLOGY - HYDROLOGY

See report by Testing Service Corporation in Appendix B.

B. GEOLOGY

GENERAL GEOLOGIC SETTING

18. The general geology of the region is described on page 4 of Appendix B.

TYPE AND EXTENT OF SUBSURFACE MATERIALS

19. Boring logs and related information appear starting on page 8 of Appendix B.

20. a. The site apparently spans a bedrock slope. In addition, the surface topography varies from 694 to 638. Consequently, the depth to bedrock varies from 42 feet below the surface to more than 100 feet.

b. This bedrock is Silurian dolomite of Niagaran Series, highly fissured and is used for water supply in the region.

c. Only residences and farm buildings are near the site. They are shown on sheet 1 of the drawings.

d. There are no pertinent facilities other than those described above.

PART III - SITE CHARACTERISTICS

A. GEOLOGY - HYDROLOGY

See report by Testing Service Corporation in Appendix B.

B. GEOLOGY

GENERAL GEOLOGIC SETTING

18. The general geology of the region is described on page 4 of Appendix B.

TYPE AND EXTENT OF SUBSURFACE MATERIALS

19. Boring logs and related information appear starting on page 8 of Appendix B.

20. a. The site apparently spans a bedrock slope. In addition, the surface topography varies from 694 to 638. Consequently, the depth to bedrock varies from 42 feet below the surface to more than 100 feet.

b. This bedrock is Silurian dolomite of Niagaran Series, highly fissured and is used for water supply in the region.

c. Dolomite is the only rock encountered. There are no outcroppings on or near the site.

C. MATERIALS CLASSIFICATION AND ANALYSIS

21. a. Textural classifications are indicated on borings 9 through 13 in Appendix B.

b. Particle size distribution was not determined for soil samples since the site is to be sealed using clays and silty clays. Particle sizes are implied by the soil descriptions on the boring logs and the "Legend for Boring Logs" in Appendix B.

c. Permeabilities were determined in the laboratory from 3 shelby tube samples. Permeability ranges from 1.1×10^{-7} to 4.1×10^{-8}. See page 4 of Appendix B.

d. Ion exchange capacity was determined for one sample of the clay and found to be 9.5 milli-equivalents of ammonium per 100 grams of soil. See page 3 of Appendix B.

D. HYDROLOGY

22. a. Once bedrock was encountered in a hole, water rose to near the surface in all holes where bedrock was hit. There are artesian wells between the site and the Iroquois river. This attests to the integrity of the clay bottom under the site.

b. Groundwater moves east-northeast across the site. There seems to be a real head differential of more than 20 feet across this site. It is questionable that boring 4 represents the true surface of the head in the dolomite. Borings 3 and 12 stopped short of bedrock; therefore, they probably show a perched surface. As a result the groundwater movement must be quite slow to support this high head difference.

c. Piezometer design is shown on sheet 5 of the drawings. Monitoring well locations are shown on sheet 4 of the drawings. The concrete support for each well will be used as a bench-mark. Elevations will be established using U.S.G.S. bench-marks in the area. Water elevations will be measured by measuring up to the lip of the 4" diameter pipe from the concrete - then down to the water surface.

d. Background water analysis will be forwarded as soon as it can be carried out.

e. A private laboratory will be employed to sample and analyze the groundwater and send test results directly to the Agency. The laboratory will be experienced in this work.

PART IV - CONSTRUCTION PLANS AND SPECIFICATIONS

A. SITE DEVELOPMENT PLAN

23. Existing conditions are shown on sheet 2 of the drawings.

24. Sheets 3 and 4 of the drawings show the development required. The clay seals will be built 200 feet in advance of any refuse deposits immediately adjacent to the property lines. The leachate collection drains in the bottoms of the trenches will be advanced 50 feet beyond the ends of open trenches.

25. Sheet 3 of the drawings shows the completed, closed and covered topography.

26. Cross sections are shown on sheets 7 and 8 of the drawings with detailed cross sections appearing on sheets 5 and 6.

a. Proposed fill areas are set forth on sheet 4 of the drawings.

b. The cross sections on sheets 7 and 8 of the drawings show the sequence of placement and thickness of each lift.

c. Thickness of cover material for each lift is 6 inches as shown on the sections on sheets 7 and 8 of the drawings.

d. The slope of the working face will be approximately 3 horizontal to 1 vertical. Since a wheel type compactor designed for this purpose will be used it may not be possible to achieve the full 3:1 slope without damaging the machine. Pushing may from time to time be downhill, but in all cases each blade load of refuse will be completely spread to a depth of no more than 2 feet uncompacted.

e. Slope of completed fill varies from place to place as shown on sheet 3 of the drawings. In no place is final slope less than 1%.

f. Subsurface strata are shown on the sections on sheets 7 and 8 of the drawings. Additional detail is given in the soil boring logs in Appendix B.

g. Plan locations of earth barriers are shown on sheet 4 of the drawings. Thicknesses of the barriers are given on sheets 7 and 8 of the drawings. Wall seals are a minimum of 12 feet thick; bottom seal, where required is 10 feet thick.

27. a. Plan of the leachate collection system is shown on sheet 4 of the drawings. Details are shown on sheets 5 and 6.

b. Leachate treatment lagoons are located as shown on either sheet 3 or 4 of the plans. The volume of each of the two lagoons is 48,000 cubic feet or 360,000 gallons.

c. The treatment process consists of an anaerobic treatment lagoon followed by aerobic treatment induced by 4 electro-mechanical, floating aerators. At a flow rate of 100 gal/min. each lagoon will provide a retention time of 60 hours or 2.5 days. Retention time can be controlled by use of the plank gate detailed on sheet 6 of the drawings. Effluent will be monitored for BOD and pathogens on the same schedule as the monitoring wells are tested.

d. The discharge point is shown on sheet 6 of the drawings. Discharge is into the road ditch along the south side of the county road along the north side of the site. The discharge point is near the northeast corner of the plot.

B. SCHEDULE OF CONSTRUCTION

Phase I - 6 months.

28. Because of the immediate need to activate this landfill, it is proposed to excavate and fill trench #37 first. (See sheet 4 of the plans.) The sand near the surface will be removed and replaced with impermeable material from the trench excavation. Trench #37 is selected because the strata here need the least amount of seal to protect the groundwater. This trench will serve the needs of the community for about 6 months. While this filling is in progress, trench #1 will be excavated, the seal constructed to a level above the first lift of refuse. The leachate drain in that trench and 50 feet beyond the trench will be installed. A temporary office and temporary haul roads will be installed.

Phase II - 9 months

A permanent entrance, office building and haul road will be constructed. The county road east of State Route 45/52 will be paved as shown in the detail titled "Entrance Road" on sheet 5 of the drawings. Topsoil will be removed and heaped to make the screening berm around the site.

Phase III - 18 years.

Filling will continue according to the sequence shown on sheet 4 of the drawings. Each area will be brought to final grade as soon as practicable and final cover, topsoil and seed will be placed. The leachate lagoons will be constructed toward the end of this period unless leachate accumulation dictates earlier need. If sewers from Kankakee are extended as far out as this site before completion it may be possible to use the sewer and not need the lagoons.

C. CONSTRUCTION REQUIREMENTS

29. a. Rainfall that impinges directly upon the open face of the refuse will be absorbed into the refuse. By developing the site starting on the existing high ground and proceeding towards the low ground means that rain falling on zones other than the fill face will be directed away from the refuse naturally. As filling progresses the final contours will cause some surface flow to be toward the open trench. To avert this, material to be used for final cover will be stockpiled along the "high side" of the trench to direct surface water around and into the natural flow pattern beyond the open trench. Proper compaction and daily cover will reduce the tendency for infiltration into refuse.

b. Gas migration will be controlled by the seals and vents shown on sheet 4 of the plans. Details are on sheet 5.

c. This ground is quite high and no flood hazard exists.

d. Employee facilities will be in the office trailer.

e. Access to the site is from State Highway 45/52, then east on the County Road bordering the site on the north to the entrance point as shown on sheet 3 of the plans.

f. Solid waste arriving at the site will be measured by volume of the delivery vehicle's loaded compartment.

PART V - OPERATING PLAN

A. SOURCE AND VOLUME

30.

SOURCE	TYPE	DAILY QUAN.	WEEKLY QUAN.	ANNUAL QUAN.
a. Residential	Ordinary	500 Cu. Yd.	2,750 Cu. Yd.	143,000 Cu. Yd.
b. Commercial	Solid	300 Cu. Yd.	1,650 Cu. Yd.	85,800 Cu. Yd.
c. Industrial	Solid	200 Cu. Yd.	1,100 Cu. Yd.	57,200 Cu. Yd.
d. Agricultural	-	-	-	-
e. Other	-	-	-	-

31. At the above projected rate of use the expected useful life of the facility is 20 years.

32. (x) No. Water treatment or wastewater treatment sludge will not be accepted at the facility.

33. "Hazardous wastes" will be accepted at the site at some time. Liquid or Sol Analysis of the material and handling procedures will be described for each material when supplementary permits are requested.

B. DESCRIPTION OF OPERATING PROCEDURES

34. a. Method of landfill will be by trenching. Previously placed refuse and spoil piles will form trench walls above existing grade.

b. Hours of operation will be from 6:00 A. M. to 4:30 P. M. Daily cover will be applied starting at 4:00 P. M. each day. Saturday hours will be from 6:00 A. M. to 2:30 P. M. with daily covering starting at 2:00 P. M.

C. OPERATING REQUIREMENTS

35. a. Personnel for supervision and operation will be transferred from a facility in Limestone Township which will close simultaneous with the opening of this site.

b. Traffic control will be by signs and painted 55 gallon drums.

c. Unloading area will be designated by the compactor operator at the face.

d. Cell size will be one day's receipts of refuse. Cell height will be a maximum of five feet in layers not exceeding two feet prior to compaction.

e. Blowing litter will be controlled by judicious use of spoil piles and trenches, by portable wind screens and by use of an alternate unloading area during windy periods.

f. Rodents will be controlled by immediately spreading and compacting each load as it is deposited and by careful application of daily cover. An exterminator will make weekly inspections and will place "bait" as, if and when necessary.

g. Flies will be controlled by prompt compaction and cover to kill larvae.

h. No special precautions are planned for bird control. Birds have not been a problem at the Limestone Township site.

i. Dust will be controlled by use of speed limits, street sweeper and water truck.

j. Odors will be controlled by prompt compaction and cover.

k. Management of surface water was described in 29. a., above. Insofar as the capacity will permit, surface water will be directed away from the site through farm drain tile originating on the property.

l. Erosion will be controlled by achieving final contours as quickly as possible and then by seeding promptly.

m. Final cover and slopes will be constructed from materials excavated from the trenches. Contours will be as shown on sheet 3 of the drawings. Topsoil from the screening berms will be distributed over the final cover to support the growth of vegetation.

n. Since gas will be well controlled and vented, no special monitoring program is proposed.

o. No reuse and recycling programs are planned for this small volume site.

p. Monitoring of groundwater will be by use of the wells shown on sheet 4 of the drawings and according to the procedures set forth in item 22, above.

36. Equipment to be used for the landfill operation.

ITEM	MODEL	NO.	DESCRIPTION
Loader	International 250	1	6 cu. yd. bucket
Compactor	Rex 350	1	50,000 lb. w/trash blade
Water Truck	Ford	1	2,000 gal. w/pump & hose
Wind Screens		6	Portable, 12 ft. high

37.-40. Not Applicable.

41. When industrial liquids are accepted, the quantity will be limited to 10 gal/cu. yd. of solid waste.

42., 43. Not Applicable.

44. Eroded zones will be regraded, compacted and reseeded as soon as weather permits after the erosion has occurred.

45. By signature affixed to this Application for Permit the Applicant affirms his intent to record description and plan of the completed site with the county official responsible for maintaining titles and records of the land, in accordance with the Rules and Regulations of this Agency, if granted a Development and/or Operating Permit.

I hereby affirm that all information contained in this Application is true and accurate to the best of my knowledge and belief.

Signature of Applicant: James S DeBaer 7/5/74
Date

Attest: Dolores J. Kratovil 7/5/74
Date

Signature of Engineer: Bert Faulc 7/5/74
Date

Illinois Reg. No.: Structural Engineer #2162

Attest: Dolores J. Kratovil 7/5/74
Date

(Seal)

Signature of other person, technical and non-technical, who has supplied data contained in the submittal.

_____ _____
Signature Date

_____
Reg. No., Position, Title, Etc.

(Seal)

_____ _____
Signature Date

_____

(Seal)